**3GPP TSG- Meeting #C3-234xxx**

**Xiamen, China, – was C3-234139**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.486** | **CR** | **0098** | **rev** | **1** | **Current version:** | **18.0.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | |
| ***Title:*** | Define the OpenAPI description of the VAE\_VRUZoneManagement API | | | | | | | | |
|  |  | | | | | | | | |
| ***Source to WG:*** | Huawei, Nokia, Nokia Shanghai Bell | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | |
|  |  | | | | | | | | |
| ***Work item code:*** | V2XAPP\_Ph3 | | | | |  | ***Date:*** | | 2023-09-29 |
|  |  | | | |  | |  | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | Rel-18 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | |
| ***Reason for change:*** | | | As specified in clauses 9.21 and 10.2 of TS 23.286, in order to enable the "Support for VRU zone configuration and operation" functionality, the VAE\_VRUZoneManagement API was defined.  The stage 3 definition of this API in this specification needs hence to be started. | | | | | | |
|  | | |  | | | | | | |
| ***Summary of change:*** | | | This CR proposes to:   * Start the definition of the API clauses of the new VAE\_VRUZoneManagement Service API. | | | | | | |
|  | | |  | | | | | | |
| ***Consequences if not approved:*** | | | * The "Support for VRU zone configuration and operation" functionality functionality is not defined in stage 3. | | | | | | |
|  | |  | | | | | | | |
| ***Clauses affected:*** | | A.12 (new Annex) | | | | | | | |
|  | |  | | | | | | | |
|  | | **Y** | | **N** |  | | |  | |
| ***Other specs*** | |  | | **X** | Other core specifications | | | TS/TR ... CR ... | |
| ***affected:*** | |  | | **X** | Test specifications | | | TS/TR ... CR ... | |
| ***(show related CRs)*** | |  | | **X** | O&M Specifications | | | TS/TR ... CR ... | |
|  | |  | | | | | | | |
| ***Other comments:*** | | This CR introduces a backwards compatible new feature by defining a new OpenAPI description for the VAE\_VRUZoneManagement API defined in this specification. | | | | | | | |
|  | |  | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | |

\* \* \* \* Start of changes \* \* \* \*

# A.11 VAE\_VRUZoneManagement API

openapi: 3.0.0

info:

title: VAE Server VRU Zone Management Service

version: 1.0.0-alpha.1

description: |

VAE Server VRU Zone Management Service.

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externalDocs:

description: 3GPP TS 29.486 V18.1.0 V2X Application Enabler (VAE) Services

url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.486/'

servers:

- url: '{apiRoot}/vae-vzm/v1'

variables:

apiRoot:

default: https://example.com

description: apiRoot as defined in clause 5.2.4 of 3GPP TS 29.122

security:

- {}

- oAuth2ClientCredentials: []

paths:

/subscriptions:

post:

summary: Request the creation of a VRU Zone Management Subscription.

operationId: CreateVRUZoneMngtSubsc

tags:

- VRU Zone Management Subscriptions (Collection)

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/components/schemas/VRUZoneMngtSubsc'

responses:

'201':

description: >

Created. The VRU Zone Management Subscription is successfully created and a

representation of the created Individual VRU Zone Management Subscription resource

shall be returned.

content:

application/json:

schema:

$ref: '#/components/schemas/VRUZoneMngtSubsc'

headers:

Location:

description: >

Contains the URI of the created Individual VRU Zone Management Subscription

resource.

required: true

schema:

type: string

'400':

$ref: 'TS29122\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29122\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29122\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29122\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29122\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29122\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29122\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29122\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29122\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29122\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29122\_CommonData.yaml#/components/responses/default'

callbacks:

EnterLeaveNotif:

'{$request.body#/notifUri}':

post:

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/components/schemas/EnterLeaveNotif'

responses:

'204':

description: >

No Content. The VRU Zone Management Enter/Leave notification is successfully

received and acknowledged and no content is returned in the response body.

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29122\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29122\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29122\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29122\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29122\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29122\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29122\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29122\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29122\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29122\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29122\_CommonData.yaml#/components/responses/default'

/subscriptions/{subscriptionId}:

parameters:

- name: subscriptionId

in: path

description: >

Represents the identifier of the Individual VRU Zone Management Subscription

resource.

required: true

schema:

type: string

get:

summary: Retrieve an existing Individual VRU Zone Management Subscription resource.

operationId: GetIndVRUZoneMngtSubsc

tags:

- Individual VRU Zone Management Subscription (Document)

responses:

'200':

description: >

OK. The requested Individual VRU Zone Management Subscription resource shall be

returned.

content:

application/json:

schema:

$ref: '#/components/schemas/VRUZoneMngtSubsc'

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29122\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29122\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29122\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29122\_CommonData.yaml#/components/responses/404'

'406':

$ref: 'TS29122\_CommonData.yaml#/components/responses/406'

'429':

$ref: 'TS29122\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29122\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29122\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29122\_CommonData.yaml#/components/responses/default'

put:

summary: Request the update of an existing Individual VRU Zone Management Subscription resource.

operationId: UpdateIndVRUZoneMngtSubsc

tags:

- Individual VRU Zone Management Subscription (Document)

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/components/schemas/VRUZoneMngtSubsc'

responses:

'200':

description: >

OK. The Individual VRU Zone Management Subscription resource is successfully updated

and a representation of the updated resource shall be returned in the response body.

content:

application/json:

schema:

$ref: '#/components/schemas/VRUZoneMngtSubsc'

'204':

description: >

No Content. The Individual VRU Zone Management Subscription resource is successfully

updated and no content is returned in the response body.

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29122\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29122\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29122\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29122\_CommonData.yaml#/components/responses/404'

'406':

$ref: 'TS29122\_CommonData.yaml#/components/responses/406'

'429':

$ref: 'TS29122\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29122\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29122\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29122\_CommonData.yaml#/components/responses/default'

patch:

summary: Request the modification of an existing Individual VRU Zone Management Subscription resource.

operationId: ModifyIndVRUZoneMngtSubsc

tags:

- Individual VRU Zone Management Subscription (Document)

requestBody:

required: true

content:

application/merge-patch+json:

schema:

$ref: '#/components/schemas/VRUZoneMngtSubscPatch'

responses:

'200':

description: >

OK. The Individual VRU Zone Management Subscription resource is successfully modified

and a representation of the updated resource shall be returned in the response body.

content:

application/json:

schema:

$ref: '#/components/schemas/VRUZoneMngtSubsc'

'204':

description: >

No Content. The Individual VRU Zone Management Subscription resource is successfully

modified and no content is returned in the response body.

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29122\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29122\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29122\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29122\_CommonData.yaml#/components/responses/404'

'406':

$ref: 'TS29122\_CommonData.yaml#/components/responses/406'

'429':

$ref: 'TS29122\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29122\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29122\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29122\_CommonData.yaml#/components/responses/default'

delete:

summary: Request the deletion of an existing Individual VRU Zone Management Subscription resource.

operationId: DeleteIndVRUZoneMngtSubsc

tags:

- Individual VRU Zone Management Subscription (Document)

responses:

'204':

description: >

No Content. The Individual VRU Zone Management Subscription resource is successfully

deleted.

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29122\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29122\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29122\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29122\_CommonData.yaml#/components/responses/404'

'406':

$ref: 'TS29122\_CommonData.yaml#/components/responses/406'

'429':

$ref: 'TS29122\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29122\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29122\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29122\_CommonData.yaml#/components/responses/default'

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{tokenUrl}'

scopes: {}

schemas:

VRUZoneMngtSubsc:

description: >

Represents a VRU Zone Management Subscription.

type: object

properties:

requestorId:

type: string

ueIdsList:

type: array

items:

$ref: 'TS29486\_VAE\_MessageDelivery.yaml#/components/schemas/V2xUeId'

minItems: 1

vruZoneInfo:

$ref: '#/components/schemas/VRUZoneInfo'

vruAppReqs:

$ref: '#/components/schemas/VRUAppReqs'

notifUri:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/Uri'

vruZoneId:

type: string

areaOfInterest:

$ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/GeographicArea'

timeValidity:

$ref: '#/components/schemas/TimeValidity'

suppFeat:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

required:

- requestorId

- notifUri

- vruZoneInfo

- vruAppReqs

VRUZoneMngtSubscPatch:

description: >

Represents the requested modifications to a VRU Zone Management Subscription.

type: object

properties:

vruZoneInfo:

$ref: '#/components/schemas/VRUZoneInfo'

vruAppReqs:

$ref: '#/components/schemas/VRUAppReqs'

notifUri:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/Uri'

areaOfInterest:

$ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/GeographicArea'

timeValidity:

$ref: '#/components/schemas/TimeValidity'

EnterLeaveNotif:

description: >

Represents a VRU Zone Management Enter/LeaveNotification.

type: object

properties:

groupId:

$ref: 'TS29486\_VAE\_MessageDelivery.yaml#/components/schemas/V2xGroupId'

ueId:

$ref: 'TS29486\_VAE\_MessageDelivery.yaml#/components/schemas/V2xUeId'

vruZoneInfo:

$ref: '#/components/schemas/VRUZoneInfo'

vruZoneId:

type: string

enterLeaveInfo:

$ref: '#/components/schemas/EnterLeaveInfo'

mobilityInfo:

$ref: '#/components/schemas/MobilityInfo'

required:

- vruZoneInfo

- vruZoneId

- enterLeaveInfo

oneOf:

- required: [groupId]

- required: [ueId]

VRUZoneInfo:

description: >

Represents VRU zone related information.

type: object

properties:

typeOfUes:

type: array

items:

$ref: '#/components/schemas/TypeOfUes'

minItems: 1

vruZoneType:

$ref: '#/components/schemas/VRUZoneType'

anyOf:

- required: [typeOfUes]

- required: [vruZoneType]

VRUAppReqs:

description: >

Represents VRU application requirements.

type: object

properties:

supportedMsgs:

type: array

items:

$ref: '#/components/schemas/MsgType'

minItems: 1

required:

- supportedMsgs

TimeValidity:

description: >

Represents the time validity information.

type: object

properties:

startTime:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/DateTime'

endTime:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/DateTime'

anyOf:

- required: [startTime]

- required: [endTime]

EnterLeaveInfo:

description: >

Represents the information related to V2X UE(s) entering/leaving a VRU zone.

type: object

properties:

time:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/DateTime'

duration:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/DurationSec'

required:

- time

MobilityInfo:

description: >

Represents mobility information.

type: object

properties:

speed:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Float'

direction:

$ref: 'TS29520\_Nnwdaf\_EventsSubscription.yaml#/components/schemas/Direction'

anyOf:

- required: [speed]

- required: [direction]

TypeOfUes:

anyOf:

- type: string

enum:

- V2X

- PEDESTRIAN

- type: string

description: >

This string provides forward-compatibility with future extensions to the enumeration

and is not used to encode content defined in the present version of this API.

description: |

Represents the type of UE(s) to be considered.

Possible values are:

- V2X: Indicates V2X UE(s).

- PEDESTRIAN: Indicates pedestrian UE(s).

VRUZoneType:

anyOf:

- type: string

enum:

- STATIC

- DYNAMIC

- type: string

description: >

This string provides forward-compatibility with future extensions to the enumeration

and is not used to encode content defined in the present version of this API.

description: |

Represents the VRU zone type.

Possible values are:

- STATIC: Indicates that the VRU zone is static.

- DYNAMIC: Indicates that the VRU zone is dynamic.

MsgType:

anyOf:

- type: string

enum:

- VAM

- CAM

- DENM

- BSM

- CPM

- type: string

description: >

This string provides forward-compatibility with future extensions to the enumeration

and is not used to encode content defined in the present version of this API.

description: |

Represents the message type.

Possible values are:

- VAM: Indicates that the type of message is VAM.

- CAM: Indicates that the type of message is CAM.

- DENM: Indicates that the type of message is DENM.

- BSM: Indicates that the type of message is BSM.

- CPM: Indicates that the type of message is CPM.

\* \* \* \* End of changes \* \* \* \*